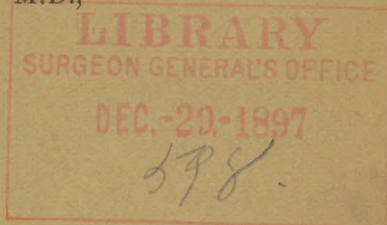


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A CASE
OF
ANEURISM OF THE ABDOMINAL AORTA
WITH THROMBOSIS OF THE
RIGHT RENAL ARTERY.

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ANEURISM OF THE ABDOMINAL AORTA
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THROMBOSIS OF THE RIGHT RENAL ARTERY.

THE patient was a negro, aged forty-seven years, a native of New Jersey, and a laborer by occupation. He was admitted to the medical wards of the Philadelphia Hospital, May 1, 1896. His mental condition was such that the following data were obtained with difficulty:

His mother, father, and five brothers are dead of unknown causes. Four brothers and one sister are alive and healthy. There is a history of alcoholism in the family, but no tuberculosis or rheumatism. He had had typhoid fever and pneumonia in boyhood, but never scarlet fever. No history of syphilis or alcoholism could be obtained. For two weeks previous to admission he had had much pain in the left iliac region, running across to the right hypochondriac. He was constipated, and had had several obstinate attacks of hiccough. There is no history of ascites or oedema at any time. The patient is delirious at intervals, and his statements are indefinite and unreliable.

Examination, upon admission, by Dr. Musser: There is considerable emaciation and muscular wasting. The pupils are contracted and are equal. The patient is in a condition of muttering delirium and can be aroused with difficulty. The abdomen is contracted to a marked degree, and the muscles of the abdominal wall are so rigid and there is such exquisite tenderness over this entire region that no data can be obtained by the usual methods.

Superficial cardiac dullness extends three and a half inches to the left of the midsternal line, and by auscultatory percussion three-fourths inch farther to the left. The right border corresponds with the midsternum. The upper limit is the upper border of the third rib. The apex-beat is in the fifth interspace in the midclavicular line. The heart-sounds at the apex are muffled and indistinct. The second sound in the aortic area is accentuated and bell-like in character. The pulse is of high tension, and the radial and temporal arteries are thickened and rigid.

There is an area between the right nipple and the right edge of the sternum where the resonance on percussion is high-pitched, the tactile fremitus is lessened, and the breath-sounds are suppressed. The heart-sounds are transmitted to and clearly heard in this region. Vocal resonance is increased over the apex of the right lung anteriorly, but the breath-sounds are suppressed over both apices. Posteriorly

there is suppression of the respiratory murmur over the upper third of both lungs. It is fairly distinct at the bases. There are no râles.

The upper border of the liver dulness corresponds with the upper border of the seventh rib.

Urine.—The amount secreted in the twenty-four hours following admission was twenty-four ounces. Its specific gravity was 1020. It was acid in reaction, and contained one-fourth, by bulk, of albumin, many pale granular casts, and much uric acid.

The temperature upon admission was 99° F., but it soon became subnormal, and ranged between 96° and 97° F. until death.

The amount of urine increased slowly to fifty-two ounces in the twenty-four hours upon May 12, and then gradually diminished in amount until death. Its chemical analysis remained practically the same.

The patient had several severe and obstinate attacks of hiccough while under observation. He was constipated and vomited frequently. The mental symptoms grew progressively worse, and five days before death he passed into a condition of stupor. Death occurred May 17.

Autopsy (at the Philadelphia Hospital, May 18, thirty hours after death).—The body of an emaciated negro. The abdomen is markedly retracted over its whole extent. The muscles of the abdominal wall are firmly contracted, and on section are of a dark slaty-red color (post-mortem change?). There is very little subcutaneous fat. Rigor mortis is well marked.

Abdominal Cavity.—There is a small amount of clear fluid. No evidence of tuberculosis upon any of the peritoneal surfaces. The liver reaches to the fifth interspace above, and extends barely to the costal margin in the midclavicular line. Behind the pancreas, and lying upon the body of the first lumbar vertebra, is a rounded tumor. This is retroperitoneal, and is opposite the origin of the seventh costal cartilage. The inferior vena cava and the nerves of the solar plexus lie upon its anterior surface. This tumor measures six centimetres in its antero-posterior diameter and eight centimetres in its vertical diameter. On dissection, it is found to be a saccular aneurism of the abdominal aorta. The cœliac axis is given off immediately above the sac, and is adherent to it. The superior mesenteric artery comes from the aorta immediately below it. The left renal artery arises from the aorta directly behind the opening of the sac, and the right renal artery is given off from the sac itself. Upon opening the aorta the mouth of the dilatation is found to be clearly defined, and measures three by two centimetres. The long diameter of the opening is in the same direction as that of the artery. The sac is entirely filled with a red and firm coagulum. This has a definite, laminated structure, which is especially marked in the portion in relation with the aneurismal wall.

When the right renal artery is opened, it is seen to contain a hard, white thrombus that appears to totally occlude the artery for a distance of eighteen millimetres from its point of exit from the aneurism. This thrombus mass is closely adherent to the arterial wall, from which it can be stripped with difficulty. It is firm and resisting and has evidently undergone fibrous change. The artery and its branches to the distal side of the thrombus are filled with softer red coagula, until the kidney substance is reached, when the coagula cease, and the vessels are free from obstruction. The left renal artery is normal. The intima of the abdominal and thoracic aorta shows many areas of fibrous change.

The connective-tissue envelope of the aorta was stripped off down to the aneurism, and at one portion of the sac was found to constitute its only covering. At other points the coats of the artery appear to be intact. The inferior vena cava lies directly to the right of the tumor and receives the left renal vein, that crosses the tumor to join it and is much dilated, measuring two centimetres in diameter at its widest point. The vein of the right kidney is normal.

Pleural Sacs.—The right is almost entirely obliterated by firm adhesions. The left has a few adhesions posteriorly at the apex.

Lungs.—Hypostatic congestion and œdema of the lower lobes on both sides. Otherwise nothing of interest.

Pericardium.—Normal.

Heart.—Full of liquid blood. The left ventricle is firmly contracted. Its myocardium is of fairly good texture and is much hypertrophied. The wall of the left ventricle measures twenty-four millimetres in thickness. There is considerable atheroma of the aorta directly above the semilunar valves, but the leaflets themselves are not affected. There is slight fibrous thickening of the free edges of the mitral leaflets, but the valve appears competent. The right ventricle is dilated and its myocardium is somewhat hypertrophied. It measures six millimetres in thickness. Valves of the right heart are normal. The weight of the heart is four hundred and forty grammes.

Spleen.—Small and is much congested. There is evidence of considerable increase in connective tissue. Its weight is sixty grammes. Dimensions: $9 \times 7 \times 1$ centimetres.

Suprarenal Capsules.—Normal.

Left Kidney.—Somewhat enlarged and measures $12.5 \times 9 \times 3$ centimetres. The capsule strips readily. The organ is somewhat flabby. The stellate veins are plainly seen. The cortex is swollen and is generally of a pale yellow color. The pyramids and medullary rays are congested.

Right Kidney.—Is smaller than usual, and measures $11 \times 6.5 \times 3$ centimetres. It is intensely congested and drips blood from the section. The capsule is somewhat adherent, and there are several small cysts upon the surface under it. The cortex is contracted and its consistency is increased. The cortex and pyramids are uniformly congested and dark-red in color.

Ureters and Bladder.—Normal.

Pancreas.—Normal.

Small Intestine.—Normal. No evidence of tuberculosis.

Stomach and Duodenum.—Nothing of interest is noted.

Colon and Rectum.—There is a large amount of fæces in scybalous masses. Both show irregular areas of intense congestion. The mucous membrane is covered by tenacious mucus. In the rectum are numerous hemorrhages into the mucous membrane, which average two centimetres in diameter. The impression is given that such areas are the result of pressure caused by the fæcal masses.

Liver.—Somewhat pale and irregularly mottled by yellowish areas. On section there is seen to be considerable perilobular congestion, and the parenchyma is pale with scattered yellow spots that appear fatty.

Gall-ducts are patulous and are not dilated.

Gall-Bladder.—Normal.

Brain, Spinal Cord, and their Membranes.—Normal.

Microscopical Examination: Left Kidney.—There is some increase of the connective-tissue elements, as well as evidences of an acute inflammatory process. The glomeruli, as a rule, are swollen, the capillaries are dilated, and the connective tissue of the tufts shows a considerable amount of round-cell infiltration. In places the tufts have undergone a hyaline degeneration that appears to commence in the capillary walls. The Malpighian bodies become swollen and homogeneous with fragmentation and, occasionally, complete loss of the nuclei. The hyaline material stains poorly with carmine, and when the process is not too advanced the faint outlines of the individual capillaries can still be seen. The cells of the tubules are much swollen throughout the cortex. In places there is much desquamation and an advanced fatty degeneration. The arterioles throughout the section show much increase of the connective tissue of the intima and adventitia. In many instances the endarteritic pro-

cess has caused complete obliteration of the lumen of the vessel. Occasionally commencing hyaline degeneration is seen in such an obliterated arteriole. There are numerous small hemorrhages scattered through the cortex.

Right Kidney.—There is some increase in the connective tissue. This condition is rather more marked than in the left kidney. The Malpighian bodies are swollen and infiltrated, and in several places there is commencing hyaline degeneration, similar to that described above. The cells of the convoluted tubules have very generally undergone fatty degeneration, and in many instances have lost their nuclei, and have entirely broken down, the tubules being filled by granular detritus. The arterioles show an endarteritis with occasional obliteration of the smaller vessels, and commencing hyaline change. There are no hemorrhages in this kidney.

This case has seemed to us to be of interest, both on account of the rarity of thrombosis of the renal artery and the peculiarity of the clinical symptoms.

There was no attempt, macroscopically at least, at collateral circulation between the branches of the occluded renal artery and the small branches of the lumbar vessels supplying the perirenal connective tissue. Indeed, in the authorities that we have consulted, there is no mention of such an anastomosis, but from the close proximity of the terminal branches of the two sets of vessels, such a communication is conceivable. The only apparent results of the stoppage of the arterial supply were the intense congestion of the organ and the advanced degeneration of the cells of the convoluted tubules. It is remarkable that the left kidney maintained the urinary secretion as long as it did, in view of its diseased condition, and the evident inability of its fellow to assist it.

The previous history, that of the present disease, and the subjective symptoms did not aid us in the diagnosis. That of nephritis and uræmia was established by the results of the urinary examination, in connection with the cerebral and gastric symptoms, which were looked upon as uræmic.

Of great interest and difficult to explain were the markedly hard and retracted abdominal walls. The emaciation of the subject led to the suspicion of possible tubercular peritonitis or gastric carcinoma. Such remarkable retraction is seldom seen except as the result of peritoneal irritation in an aged subject. It is known to occur, of course, in meningitis of childhood.

The great amount of sclerosis throughout the whole arterial system may perhaps be explained by alcoholism, though the extensive endarteritis of the smaller vessels of the kidney suggests a possible syphilitic origin.

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BY

HENRY W. CATTELL, A.M., M.D.

THE development of medical science is proceeding at such a rapid rate that a medical journal is an absolute necessity to every practising physician. The INTERNATIONAL MEDICAL MAGAZINE supplies this need by giving, as it does, authoritative expression to the results of the experience and investigations of the foremost physicians, surgeons, and lecturers of the leading medical schools of the United States and Canada, together with those of the great medical centres abroad, such as London, Paris, Berlin, and Vienna.

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